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ABSTRACT

A questionnaire surveying on the job training programs at industrial firms in the Milwaukee area was administered through interviews with the firms' personnel officers. Of a random sample of 245 companies, interviews were completed at 150 firms. The survey revealed a generally negative attitude toward vocational school efforts in imparting training in specific company jobs because vocational school education is seen as being too generalized, rather than offering adequate preparation in particular skills. It is suggested that there should be a separation of function of vocational school and company training, with the responsibility for training and practice opportunities being left to the company's on the job training, and the vocational school providing the general know-how common to most skilled work. It is also suggested that vocational school should accompany, rather than precede, employment in a firm offering on the job training. (A copy of the questionnaire, the detailed findings from responses, are included.) (mf)

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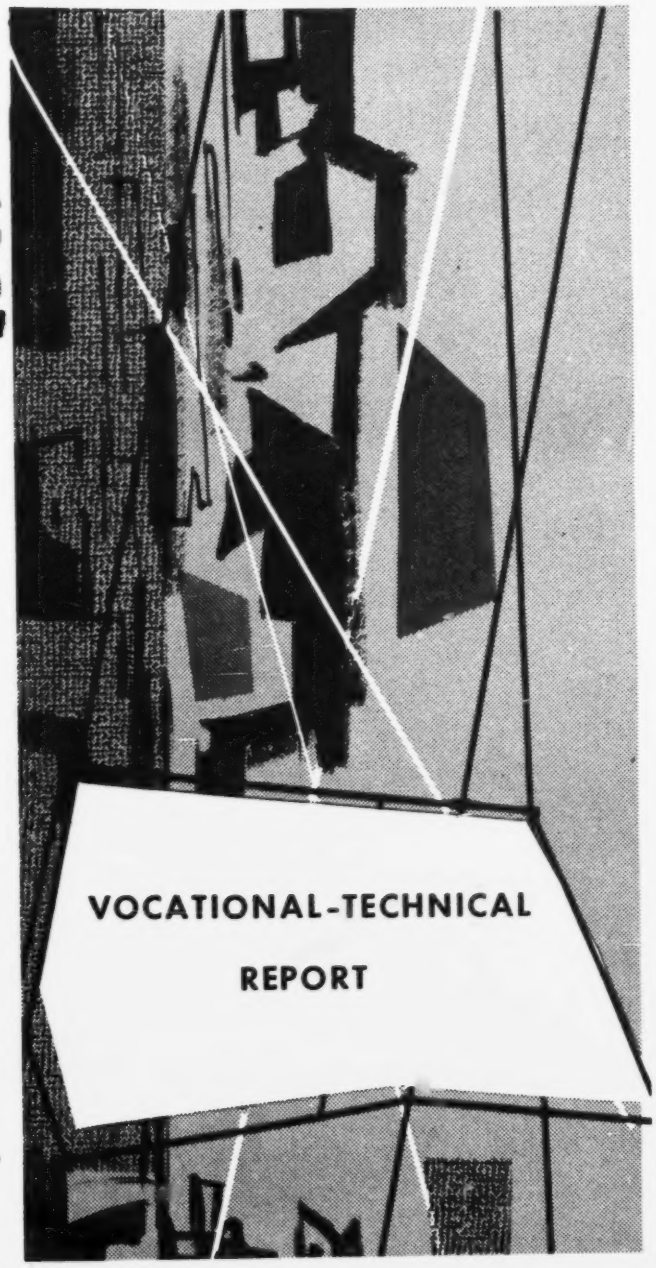

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ON-THE-JOB TRAINING IN MILWAUKEE-NATURE, EXTENT, AND RELATIONSHIP TO VOCATIONAL EDUCATION

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RESEARCH REPORT

Industrial Relations Research Institute

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ON-THE-JOB TRAINING IN MILWAUKEE-- NATURE, EXTENT, AND RELATIONSHIP TO VOCATIONAL EDUCATION*

With industry's growing need for a more skilled work force, the role of training in preparing workers to fill this need has become increasingly important. In general, workers receive training in two settings--in vocational schools and on the job.

The stated purpose of this study was to evaluate the degree of complementarity and, perhaps, redundancy of these two types of training in the Milwaukee area. Did on-the-job training, in many instances, add the specific skills required for a particular job to knowledge and practical training acquired in vocational schools? On the other hand, to what extent did on-the job training substitute for instruction that could have been provided by vocational schools? To what extent did this training duplicate training already received by the worker in a vocational school? If substitution or duplication occurred, what were the reasons for this seemingly inefficient application of total training resources?

In approaching the issue of efficiency (measured by complementarity) and inefficiency (measured by substitution or duplication), it was found that other important questions related to on-the-job training helped explain the predominant pattern of the relationship between on-the-job and vocational school training. Consequently, the questions in this study are concerned with the reasons that

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* John Conrad and Charles Hegji served as research assistants on the project.

firms undertake training, the extent and nature of their training programs, the selection procedure for trainees, and the attitude of firms towards both the quality and the expected coverage of vocational school training. In fact, in addition to serving as a guide to the findings regarding the efficiency issue, these questions in themselves constitute important elements in understanding the role of on-the-job training in providing for skilled manpower needs. Further, they suggest the nature of future cooperative training procedures between industry and vocational schools.

Methodology

Data were gathered from interviews with 150 Milwaukee firms, a portion of a larger group of 245 compaines which represented a random distribution of area employers. (See Appendix B for the interview questionnaire.) The list was the same as that used in a previous study of the extent of manpower forecasting among Milwaukee firms.

Although all industrial classes were represented, including nonprofit operations where employees were not covered by collective bargaining agreements, the sample itself was not representative of all area companies in that the firms interviewed were those which considered that they had some sort of on-the-job training program. (See Appendix A for the preliminary letter mailed to the study group.) These firms tended to be large; none had less than 25 employees. The bulk of them were in manufacturing (132),

and the remainder in retail trade, insurance and banking, and utilities.

Interviews were held with personnel officers, the persons most knowledgeable about company training programs. The omission of a question regarding the respondent's view as to what constitutes an on-the-job training program, as well as a statement defining the term on the questionnaire was deliberate. Rather than to define the term in advance, it was thought to be a better procedure to allow the respondent a broader range for including his training program in the study. In fact, a closer examination of the definitional problem provides insights into the nature of the relationship between vocational school and company training. In any case, the principal purpose of the study was to examine aspects of company training itself, and not to decide whether a given program fits preconceived notions of what constitutes on-the-job training. In the course of this report, the issue of the extent and nature of company training will be treated.

The respondents tried to answer all questions, but those concerning wages of trainees (6) and on training costs (7) did not receive meaningful replies. The question of a training wage was not found to be relevant, partly because workers were very seldom designated as trainees and did not receive a special training wage. In most cases, the initial wage of the "trainee" was the starting wage for the new job, with customary periodic increases provided.

Almost none of the respondents could offer approximate estimates of costs. Probably because training programs were rarely of a formal nature, no records were kept nor were estimates made of forgone production of instructors; the response that foremen's duties normally included instruction of new workers scarcely constitutes a cost estimate, especially when the time allotted for this function was not specified. Further, the cost of below-average productivity of workers on a new job was often reflected in relatively low starting and early wages.

Questions (1) and (12), on the number and types of trainees, were also omitted in the study, partly because they were unclear to the respondents and partly because the responses to other questions provided most of the data sought.

Although the responses themselves were for the most part quantitative in nature, they were not accurate enough to make detailed statistical analysis meaningful. Instead, the conclusions of the study are presented qualitatively. In the section on detailed results, the numerical bases of the conclusions are noted.

Summary and Conclusions

Adequacy of Vocational Education

Most firms report that they are satisfied with the vocational education received by those workers trained for advanced positions. Lest this general conclusion, important though it is, be considered a clear indication that the vocational school-company training

relationship needs little improvement, it should be pointed out that the most favorable responses were made by the firms which expected the least from vocational education provided by the schools. On the other hand, those firms which tried to fit workers previously trained in vocational schools into specific jobs (a minority among the respondents) usually found that these workers needed not only additional training but even review and re-education in the techniques they learned in the schools.

Types of training programs

Most firms trained workers individually on an ad hoc basis, as they assigned workers to fill jobs for which the workers were not fully qualified. Very few firms reported that they had formal training programs.

This finding was not surprising when consideration is given to what a formal training program entails. A working definition for formal on-the-job training is a program that follows a definite plan in which (a) there is a detailed selection process for applicants based on occupational qualification, (b) the course of training has specific contents and set chronology of presentation, (c) the course extends over a set period of time, and (d) the course is taught by instructors with qualifications for teaching the material to be covered and who are assigned these instructional duties as part or all of their job function.[1]

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1 This definition is sugeested by Charles S. Benson and Paul R. Lohnes, "Skill Requirements and Industrial Training in Durable Goods Manufacturing," Industrial and Labor Relations Review, 12 (July 1959) p. 549.

The training programs of scarcely any of the Milwaukee firms interviewed would qualify as a formal program by all these criteria, and very few firms adhere to most of the conditions. With a "student" group and a structured "course" taught by a regular "faculty," such a program really represents an aspect of education rather than training.

Perhaps the very difference between the meaning of education and of training explains why so few firms have formal on-the-job training programs, as defined above. Most firms are prepared to train workers but not to educate them, even for particular industrial occupations. That is, they are prepared to add to already acquired expertise in particular skills, the special modifications required to perform the tasks in a given work setting. Further, they are willing to allow for inefficiencies and low productivity while the worker practices his new skills (undergoes training). This forbearance is usually reflected not simply in a patient attitude towards the time and inefficiency costs associated with practicing new skills until maximum ability is reached, but also in a below-scale starting wage for the new job (the "training" wage for most firms).

The typical pattern of company training followed by most of the firms in the study is not one of on-the-job training, if that term implies teaching a worker new broad skills at the plant site. Rather it is a form of instruction that can perhaps be described by the term "as-you-work training." This expression implies that when an opening for a job requiring some skill

arises and is to be filled by a promoted worker, the process of learning and practice (training) does not precede the assignment but begins with the worker's taking his new place in the production process.

Thus, at least for the Milwaukee firms studied, the following observation made nearly 15 years ago concerning company training in general still applies: "Industrial training is seldom organized in a formal and continuing program. Training is used to meet spot needs . . . operations expanded, new methods and techniques introduced."[2]

This practice of upgrading and training of workers to meet specific needs explains the weakness of the connection between company training programs and manpower forecasting. Milwaukee firms, in general, train for current rather than future needs. The pattern of firms' foreseeing shortages of skilled manpower and training workers to prevent these shortages simply does not match company practices. For most firms, there is no interval between training and output from the trainee; training only means a process of learning slightly new techniques and modifications of old skills to fit specific company labor requirements and of practicing these new tasks in production until maximum efficiency and full-scale wages are attained.

Of course, for those few firms which have formal training programs consistent with the definition presented above, the

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2 National Manpower Council, A Policy for Skilled Manpower, New York: Columbia University Press, 1954, p. 210.

connection between training and future needs is clear. These firms, by the very nature of the detailed instruction involved in their training programs, cannot use their trainees, at least to any appreciable extent, in current operations. They train their workers for future needs. Obviously, they must have some knowledge or estimate of their needs for skilled manpower in order to make a rational judgment as to the number of trainees who should enter the program and the type of instruction to offer.

A small number of firms report that they provide training, not for any specific current or future needs but as an indirect fringe benefit. These respondents report that they carry on training as a means of attracting workers in a tight labor market. Inasmuch as trainees are not working on current output in the production process, the programs so motivated tend to be of the formal type.

A final type of training, which may better be classified as basic education in the elementary tools of learning--simple arithmetic, reading, and writing, has been undertaken recently by a few firms. These programs, which are of the formal classroom type, have been initiated partly to improve the capabilities of the existing unskilled workforce and partly as the firms' efforts to reduce racial inequality of employment opportunities. These programs also include the foreign born.

In this type of program, the firm in effect provides education missed at the lower levels of schooling. While of the formal type, instruction is carried on outside of work hours, so that

production is not interrupted or affected by the training process. On the other hand, while it is hoped that expanded education will improve the efficiency of the trainees, the programs are not related to any specific new job the workers may hold. Rather, they serve the threefold purpose of improving the basic educational level of the workers involved, itself a laudable contribution to community welfare, of improving the workers' efficiency on their present jobs, and of widening their opportunities for later upgrading.

Considering that most training programs are informal in nature, it is not surprising that the time period of these programs is indefinite and usually of long duration. Respondents consider the period of training, when it is little more than practice of newly acquired skills, to last until the worker attains peak efficiency. Therefore, since this period varies from worker to worker, the length of the so-called training period depends on the worker's facility in adopting to new techniques and methods.

Future Relations Between On-the-Job Training and Vocational Education

That firms more and more emphasize the training rather than the educational aspects of preparation for and adaptation to skilled work would seem to suggest a possible future favorable dovetailing of functions under which the vocational schools would teach the necessary skills for particular jobs and company training programs would provide the opportunity to practice and develop these skills to the fullest. Unfortunately, most firms report that

vocational education for particular jobs provides inadequate preparation for related company positions, and that the time required for training is not significantly less for workers who have gone through a vocational school course than for workers promoted without prior preparation for the new job.

Several explanations can be offered for the negative attitude of firms towards vocational school efforts in imparting training for specific company jobs. These reasons also suggest a likely path which the future company-vocational school training relationship will follow.

1. <u>There has been a growing tendency for jobs to include a group of tasks, functions, and responsibilities, many of which are specific to a given company, rather than to closely parallel the work associated with traditional occupational classifications.</u> This means that it is becoming increasingly difficult for a vocational school to educate workers for specific company jobs, since job content, even when conventional occupational titles are still used, may vary substantially among companies. Vocational schools can only educate groups of workers along broad occupational lines, without regard for the particular job specification of any one company.

2. As a corollary to the objection of firms that vocational school training and education is too generalized for their uses, representatives of the vocational school point out that the delineation of skills related to a particular job that might be comparable among several companies is becoming too fine to

lead to classes of efficient size that would allow for economic operations.

3. Even for occupations which still retain a high degree of uniformity of skill content among firms, such as welding and some foundry occupations, there is some expressed dissatisfaction with the adequacy of vocational school preparation. In response to the charge that its instruction has not kept pace with the technological advances in these occupations, the vocational school replies that new sophisticated equipment and machinery is becoming very costly, and, further, that changes in supporting equipment are being introduced so rapidly that it is becoming economically impossible for the school to keep up to date.

Related to these problems is the evolution of a new system of cooperative training between vocational school and firm, which will probably develop further in the future. This system has the following characteristics:

1. The role of vocational school and company training is becoming distinct. The former tends to instruct in basic educational tasks related to industry--mathematics, drafting, and so forth--and to stress development and training in basic mechanical skills. In other words, vocational schools emphasize education and move towards becoming vocational colleges rather than training centers. The firms, for their part, are expanding their participation in training, where training means not only practice in new skills, but instruction in them.

The result of this separation of roles will find the worker more broadly educated for industrial needs, as the vocational school concentrates on education, but more narrowly trained for specific jobs, in line with individual company requirements for particular job functions; the workers will be trained to fill a job and not an occupational classification.[3]

Firms may still continue and probably will even expand their practice of instructing those unskilled workers who have not attained the basic fundamentals of education. It would be impractical for these workers, well past the normal age for acquiring these skills, to receive this instruction in grade schools. The vocational school itself may add remedial educational courses to its curriculum.

2. Training programs of firms will more closely parallel the arrangements that are now developing in apprenticeship plans. As under these plans, practical instruction and training will be provided by the firm for, say, four days of the week, with education in theoretical or classroom aspects of the job conducted on the fifth day by the vocational school. In fact, today the system of informal as-you-work training practiced by the respondent firms in some respects parallels the apprenticeship-firm relationship. Learning and working are carried on concurrently,

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3 This tendency is not inconsistent with the policy of firms to emphasize training in skills rather than instruction, in that instruction tends to be very narrow, aimed at mastering only those techniques specifically needed in the new job and not those customarily associated with the occupational classification to which the job belongs.

and the below-full-scale training wage corresponds to the apprenticeship wage, even to the extent that step increases in apprenticeship pay are the counterpart of periodic increases in wages of new entrants into a job, up towards the full-scale level.

With this separation of function of vocational school and company training, many of the dissatisfactions with vocational training could be resolved. The increasing problems of providing outside training for a changing industrial pattern, which sees jobs organized as specific tasks rather than as general occupational classifications, and of adjusting educational equipment and machinery to rapidly changing technology are being recognized. The vocational school will be asked less and less to provide training and practice opportunities in particular skills, and more and more to provide the general know-how common to most skilled work. The charge, often expressed, that the schools provide too much theory and too little practice will become groundless; in effect, the school will be asked to specialize in "theory," or in classroom work in basic skills required for industry, and in skills related to particular occupations.

3. This last function of the vocational schools is necessary to permit the system to operate. Complex producting units could not be expected to provide instruction over a wide range of skills specific to many particular jobs, which include the skills associated with several industrial classifications. The usual

pattern would find the promoted worker receiving basic instruction at the vocational school in the techniques and in additional educational background, if required, related to his new job. Considering that jobs may cut across more than one conventional occupational classification, the worker may have to receive vocational school training in more than one course area. Meanwhile he would be working on his new job, learning modifications of skills specific to his firm's needs at the plant and practicing (training) towards full efficiency.

Note that this process reverses the past order of the vocational school-company training relationship. Instead of the company trying to place previously trained (educated) workers into higher-level job openings, the company first places the worker and begins his training in the company, and it also advances his education at the vocational school towards the basic skill requirements of the new job. The question of an inadequately trained worker does not arise in that the whole training process from its outset is geared to the company's needs; the firm is not asked to fit its job requirements to the Procrustean bed of skills and techniques learned beforehand.

If it appears that formal education in skills on, say, a one-day-a-week basis would offer insufficient instruction, it should be emphasized that the issue is not one of teaching advanced skills to new, unskilled, uneducated workers. Rather, promotion is by graduated steps up the ladder of company jobs. With instruction in basic industrial skills, a worker trained at a vocational school could probably fit easily into those

initial jobs requiring skills and proficiencies beyond the unskilled level. Further, successful completion of a basic vocational school program could serve as a screening device indicating aptitude for progression towards advanced industrial jobs; in much the same way a generalized college education, though providing little training for any specific job, indicates an aptitude for higher office and executive positions.

The detailed responses to the questionnaire presented below will indicate the pattern of the present and future vocational school-company training relationship among Milwaukee firms.

Detailed Findings

The findings from responses to the specific questions for which meaningful answers were received, and their implications are summarized in this section.

Question 2 (Skill level of jobs having training programs)

This question was intended to find the percentage of skilled, semiskilled, and office jobs for which a firm had a training program for new entrants, not what percentage of its training program was for each job category--a question whose response would be influenced by the company's skill mix. As could be expected, the bulk of training was for skilled jobs. On average, 40 percent of the typical firm's skilled jobs, while only 20 percent of the semiskilled jobs, were filled by workers who received company training.

Only 5 percent of the office jobs were filled by workers who had additional company training. As a general rule, the

respondents were satisfied with office training, their employees received in high schools and secretarial schools. This widespread acceptance of prior office training indicates that the individual requirements for office jobs do not differ significantly among compaines, so that the school instruction usually requires little modification for application to specific jobs.

Question 3 (Length of program)

The framework for the responses proved unrealistic. Only the few formal programs were as short as the 18-week limit for the classified responses. Programs of the six firms among the respondents which had formal programs, under the rigorous specification of the term presented above, averaged 16 weeks in length.

The other 144 firms (96 percent) had informal programs, a term which encompassed a range of training from a little guidance and practice and allowance for inexperience on a new job through apprenticeship training. The time periods extended up to six years, with 25 firms reporting a period of over four years; the over-all median was two years.[4] These results reflect the high degree of informality of the training programs.[5] Almost without exception, the firms consider the termination of

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4 Many firms have more than one training program. Thus the median value of two years represents the median of the medians for the individual companies.

5 It should be emphasized that the criterion for formality or informality was not the degree of structure to the arrangements, for then apprenticeship programs certainly would be listed as formal. Rather, it was the method and substance of instruction and the degree of separation of training from actual production.

the training period as the point at which full average efficiency on the job was reached, when no further special guidance, surveillance, or instruction was required, and when the average wage for the job was attained.

With regard to the elements of length of program and trainee wage, current company training programs seem to provide an acceptable substitute for the more unpopular aspects of apprenticeship arrangements. The period varies with the aptitude and capacity of the worker and is not arbitrarily long for those who can attain average efficiency before the end of an established training period. Further, "training" wages for the firms are much higher than apprenticeship terms. In fact, in almost all cases the worker is not called a trainee but is simply treated as a new entrant into a job classification, eligible for step raises up the wage scale.

On the positive side of apprenticeship plans, the instruction is less haphazard than in other training programs, and arrangements with the vocational school for a joint effort in education and training probably leads to more effective learning. As was noted in the summary above, and as will be detailed in the discussion of Question 5 below, firms are tending to adopt this cooperative arrangement with the vocational school in their non-apprenticeship training programs.

Question 4 (How are workers selected for training programs?)

Table 1 tabulates the responses to this question. The total number of responses add to more than 150 because several

respondents reported more than one basis of selection for a given job, and different bases for different jobs.

TABLE 1

Method of Selection for Training

Response	Number
Foreman recommendation	26
Previous training record	9
Seniority	38
Upon hiring	95
Other	46

Thus, new hires are selected as trainees for over 40 percent of the jobs for which training is undertaken.[6] This finding does not mean that a plurality of firms have a policy of using outside sources to fill skilled job openings; rather it indicates that a large number of firms feel that new entrants in work requiring skill need training in techniques specific to the firm.

For those not new to the company, training policy was tantamount to promotion policy in that except for the half-dozen firms which had formal training programs and which did not train workers for specific openings, training was a consequence of being placed in a new, advanced job.

There were two categories of employees and trained: those advanced by company decision, and those promoted by

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6 This is not the same thing as reporting that 40 percent of trainees are new hirees, which would be the case only if the number of trainees in each job were the same.

collective bargaining agreements. In the "seniority" category, 30 cases came about because of seniority provisions in collective bargaining agreements, and eight because of campany policy to use seniority as a guide to promotion. For the "other" category, 29 reported that promotion and training was by "posting", a collective bargaining procedure for designating workers to be upgraded. In the other 17 cases, test scores, general aptitude, personnel office recommendations, and scattered other company-determined measures for promotion were used.

Thus, the addition of the latter 16 to the eight seniority cases not related to collective bargaining agreements and the 35 in the first two categories yields 60 as the number of instances in which training was by company decision. There were 59 cases of training associated with promotion related to union contracts--29 in the "other" category and 30 in the seniority group. Not much significance should be derived from this nearly even division between union agreement and unilateral company decision; it is less a measure of the influence of unions than of their presence in that where workers are covered by collective bargaining agreements, promotion practices usually form part of the contractual terms.

Question 5 (How is the program conducted?)

This question was designed not only to find out the training method employed, but also to learn about the content of the program. As with the previous question, more than 150 responses were secured to parts (a) and (b) because many firms had more than one training program.

The responses showed that the predominant pattern was for individual training in practical work, as presented in the smiple breakdown of Table 2.

TABLE 2

Training Method and Content

(a)	Individual	130	Group	41
(b)	Practical work	166	and/or "theory"	57[a]

"Theory" was defined as instruction which took place off the production line, to differentiate education from pure training or practice in production. It is interesting to note that group training, a necessary condition for formal training as defined above, was conducted only by those firms having apprenticeship programs,[7] the six firms which fit the formal category in all respects, and the five firms currently giving courses in basic education. Further, all employees undergoing group training received "theoretical" training; that is, they received instruction for their job and in related areas outside the actual production line. The 15 people in the apprenticeship program, it was noted, received their instruction in the vocational school. It is significant that workers received off-the-job instruction in only 16 of the 130 programs in which they received individual training. This finding substantiates the conclusion that the prevailing

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a The total for (b) is greater than for (a) because those programs which included theory as well as practical work were placed in both categories of (b).

7 Not all apprenticeship arrangements included group training.

pattern for training was for new workers in a skilled position, either entering through promotion or hired from the outside, to receive instruction and training on the production line, with no attempt to broaden instruction, in a more formal setting, to cover aspects of skills not directly related to company needs.

Question 8a (Why do you have a training program?)

Of the three structured responses to this question, by far the most frequently expressed was the first, "to provide for (more) skilled manpower needs," with 122 cases; 46 responded "to serve as an incentive for new hirees"; and 12 reported "other reasons," such as "company policy to have training programs" (6) or "for general improvmment of the workforce" (4). The responses totalled more than 150 because a few firms gave more than one reason.

Unfortunately, the question was not correctly phrased to measure the degree to which firms carried out training programs as a form of fringe benefit unrelated to specific company needs. The comparatively large number of firms that reported that they had training programs as an incentive for new hirees often misinterpreted the question, in that they gave this answer as a reason for training new hirees to fill skilled jobs rather than promoting from within. The intent of the question was to find whether and to what extent firms placed workers into training soon after hiring as part of a company recruitment policy rather than to fill specific needs. This confusion of purpose and response was not able to be resolved during the interviews.

Question 8b (Would it be more difficult to hire and retain good workers without a program?)

The response to this question was overwhelmingly affirmative, 126 to 24. This question loses some of its impact because it is of mutual interest to both employer and worker to have training programs, informal as they may be. The firm, as previously noted, feels the need for training because of its dissatisfaction with the prior preparation of those who would fill skilled jobs. The workers want the training to qualify for these jobs. The question was designed to find out the degree to which training programs served as an incentive in recruitment and in avoiding turnover, but because of the mutual need for training to develop the capabilities to fill and hold these jobs, the responses reflected this need rather than the incentive effect.

Question 9 (Current activity of those terminating training for a company job in the last year)

It is not surprising that the retention rate was very high for those workers who had recently completed a training program as a firm would be anxious to keep those for whom it had recently taken the time and money to train. On the workers' part, since training tends to be specific to the firm, there would be an incentive for them to try to profit from new skills which increased their earning power in the firm because of increased productivity and which were not easily transferable to other firms. Finally, the short period relevant to the question, up to one year as a maximum, reduced the likelihood of turnover. On average, 92 percent of the employees trained were still with the company.

Of those who remained with the company, 83 percent, on average, were on the job for which they had completed training, about 8 percent were in closely related jobs (described as a lateral movement), and 7 percent had begun training for still more advanced work. Again, the large number still on the same job can be largely explained by the short time period involved.

Not a single firm reported that the workers were on lesser jobs because they were incapable of filling the jobs for which they trained. This does not indicate that the training was so excellently conducted, but that in almost all cases, training of the informal type was not considered successfully completed until the worker reached at least average efficiency in the job for which he was being trained. The only possibility for a situation to arise in which a worker was not able to satisfy the production requirements in a job for which he had successfully completed a training program would be if he completed training before undertaking the job. As was noted in many places above, only in a very few cases was training not carried out while the worker was actually producing on the job for which he was being trained.

Question 10a (For what jobs is capacity to be promoted--with training--a condition of employment?)

Since company policy of promotion-from-within was so widespread, it was thought that personnel policy would stress capacity for promotion as a condition of employment. If firms were going to train their own workers to fill advanced openings, would they not try to secure a workforce that would be receptive to training?

In fact, only 22 of the 150 firms made capacity to be promoted a condition of employment, and of these only five stated that this requirement applied to all jobs. For nine firms, it was a condition of employment only for skilled production jobs, and for the other eight, it was a condition only for office-executive jobs. An explanation for this result can be found in the comment of one respondent who noted that while his firm tried to train only those workers who could fill a higher job successfully, there were generally enough qualified workers at ranks just below the opening, so that they never had found a need for imposing the promotability restriction as an obstacle to company employment.

Question 11 (How many worked for your firm prior to training?)

As respondents did not have exact data, their estimates were on an approximate percentage basis. On average, about 80 percent of the workers who entered training had prior company experience. This result does not contradict the responses to Question 4--that as many as 40 percent were selected for training upon hiring. In many cases, there was a period of adjustment between selection and actual training.

Question 13 (Company attitudes towards prior training):

Question 13a (Do vocational schools provide courses for your specific needs?)

This question was modified during the interview to whether, on balance, the firm was satisfied with the occupational training received in vocational schools. As was expressed in the summary, most firms were not satisfied with the training. Dissatisfaction

was expressed by 112, and 38 thought preparation was adequate. Of the latter, most emphasized that the best preparation was received by office-clerical workers.

Question 13b (Was further training required?) .

The response was almost unanimous that further training was needed except in the clerical field. This response was not inconsistent with responses to previous questions, as a number of firms stated that while they were satisfied in general with prior training, in that less additional company training was required that for workers not trained previously, some additional training still was needed.

Question 13c (Why do they need further training?)

It was in answer to this and the following question that the firms showed their mixed attitudes towards prior vocational education. Only 13 of the respondents gave "inadequate prior vocational training" as the reason that further company training was required. "Inadequate" was defined as "insufficiently prepared for skilled work in general", rather than "inadequate for filling a particular job". Companies would expect to build upon prior general vocational training in preparing workers for the requirements of a specific job in a particular company. In short, the firms were for the most part satisfied with prior general training; 137 gave further training because prior training was not sufficiently centered on specific company needs and techniques to allow a worker to produce at average efficiency without further company training.

Question 13d (What percent require further training in the general occupational area?)

About 25 percent was the average response to this question. This percentage reflects over-all satisfaction with general occupational training in the vocational schools in that the answer applied to all degrees of repetition, even for those workers who needed only a little additional or repeated instruction and training. Further, it should be noted that company jobs often include skill requirements that cut across conventional occupational lines.

Question 14 (Does the company offer training courses of a background nature?)

Only 16 firms offer courses of training or instruction of a general educational nature. That there are a few more than those firms which give instruction in the elements of education or in vocational fields not related to any specific opening only indicates that the question was liberally interpreted to include any technical instruction not dealing directly with production.

Question 14a (Why are they offered?)

Eleven of the respondents related this practice to their having formal training programs or basic education courses--that is, in the "other" category. Only five introduced these courses or type of instruction because the new workers in the job were poorly grounded in fundamentals.

Question 15a (Do you plan to expand your training programs?)

Eighty-six respondents thought they would increase training operations; 64 thought they would remain at about the same level.

Question 15b (If you expect training to expand, why do you think so?)

Of the 86 who thought training would expand, 77 believed that increased need for skilled work in company operations would be the causal factor. Only nine thought tightness in the labor market for trained (skilled) workers would lead to expanded company training involvement. The small number does not mean that the firms thought that it would be easy to hire skilled workers; on the contrary, they believed workers would need further training whether advanced workers were hired from outside or promoted from within. This attitude was consistent with the finding that most firms felt that they had to train new workers on a skilled job regardless of their previous training or experience.

Question 16a (How can outside vocational training aid you in fulfilling future needs for skilled manpower?)

It might seem that such an open-ended question would draw forth a wide range of answers, but almost every respondent stressed the role of outside (vocational school) training in basic skills, whether for industry or in the fundamentals of learning. Not a one spoke of specific training for company jobs, although a few mentioned the possibility of instruction related to company openings. Fifteen respondents noted that the vocational school could serve as an aid in recruitment, either directly by acting as an employment exchange as well as a job center, or indirectly by indicating a probability of successful company placement for workers who had undergone the discipline of course attendance and completion.

Question 16b (How can schools improve their present training practices?)

Although this was also an open-ended question, again the answers found a discernible, simple pattern. This time three classifications emerged: those who felt there should be still more emphasis on basic skills and fundamentals of education (about 50 percent), those who thought the schools should develop training programs more closely coordinated with company needs (about 35 percent), and those who had no suggestion for improvement (15 percent), either because they were satisfied with current arrangements or because they had no suggestions to offer.

The relatively large number who still hold to the view that outside training can serve to prepare workers for specific company openings stress the need for greater cooperation between school and firm to direct outside training more closely to company requirements. Most in this category recognize the problems of the vocational school with regard to the minimum size for a training class and the difficulty in providing equipment for training in pace with rapid changes in technology.

Question 17 (Do you train for specific openings or for general expectation of need for skilled workers?)

As expected, by far the largest number of firms (136) report that they train for specific openings, while 38 train for general expectation of need for skilled workers. (The total of responses exceeds 150 because some firms report on more than one training program.)

That the number who train for general need is greater than the small number of firms having formal training programs reflects training arrangements under some apprenticeship programs. As apprentices, workers in these programs are not producing output under the job classification they will have at the end of their training period, although many of their tasks entail functions they will later have as full-scale workers in the job classification for which they are training. The company expects that there will be a need for these workers when their training is completed. In fact, a problem of placement is not likely to arise in that those who have completed apprenticeship training would be placed in jobs, which may be open due to replacement as well as expansion, before other sources of labor supply would be tapped for this purpose.

Question 18 (Do you forecast manpower needs for specific jobs?)

The responses to this question were rather evenly divided, with 79 firms reporting that they forecast manpower needs and 71 either not responding or reporting no forecasting efforts. A firm was considered a forecaster if it made numerical employment projections for at least one company labor classification, without regard to whether its method of forecasting was detailed or superficial. Even though the vast majority of firms engage in informal training, placing workers in openings at the time they occur and training for current rather than future needs, many found manpower forecasting an important aspect of personnel policy. Since training serves only to add to existing skills and/or aptitudes,

many firms used employment projection as a guide to hiring workers who would most easily adapt to openings expected to occur.

As for the few firms with formal programs for training workers before openings arose, four out of six forecast their employment needs. The others assumed that, in general, the number of openings would exceed the number trained for skilled jobs.

Question 19 (What are the qualities you look for in selection of workers for a given training program?)

This question differs from Question 4 in that the earlier question asked for the source of selection and this one asks for the basis. There is some overlap, though, in that test results and union contract terms serve as both a source and a basis of selection.

The leading quality serving as a basis for company selection is the worker's past work record, for the firm for promoted workers, or for other firms for the new hires. What the firm seeks are workers with aptitude for the open job, and they consider work experience as the best indicator of aptitude. In response to the question work experience was mentioned by 112 firms, union provisions or seniority by 56, test scores by 15, aptitude by 23, and miscellaneous characteristics such as dependability, ambition, and interest by 18. Again, responses totaled more than 150 because some firms listed more than one basis.

The last two categories could only have measurements from past work experience, but the experience criterion was reserved as an indicator of ability and aptitude. It is significant that only seven firms reported that they used records in previous

training courses or evidence of completing such courses as a basis of selection. In other words, though prior training might lead to good marks for the aptitude-ability-personal traits criteria, these qualities would have to be demonstrated in work. The firm was not likely to place previously trained workers into training programs to adapt their skills to specific company needs unless their work experience showed they were more likely to succeed in the new jobs than workers who had not undergone related previous training.

Appendix A

Preliminary Letter

THE UNIVERSITY OF WISCONSIN-MILWAUKEE

Deparrment of Economics

In a project sponsored by the Center for Studies in Vocational and Technical Education of the University at Madison, we are studying the relationship of on-the-job training to vocational education. Specifically, we are investigating the degree to which company programs here in Milwaukee complement or substitute for the general vocational training provided by schools. The information we acquire may be useful in evaluating the effectiveness of prior training for company needs as well as for suggesting recommendation to improve the tie between vocational and on-the-job training.

To these ends we are trying to gather data through use of an interview questionnaire. We would appreciate it greatly if you would consent to meet with our interviewer, answering questions relevant to this topic. Of course, any information you provide will be kept confidential and will appear in a final report only as a part of a statistical compilation without reference to company name.

We will call you soon to try to arrange for an interview. Thank you for your cooperation.

Sincerely,

RICHARD PERLMAN,
Professor of Economics

RP:fl

Appendix B

Questionnaire

1. Do you have an on-the-job training program? Yes___ No___

   Per cent of workers currently in training__

   Ratio to last year__. To two years ago___

2. For what jobs?

   Skilled production___ Per cent of employment___

   Semiskilled ___ ___

   Office ___ ___

3. How long is the program?

   Under 3 weeks___ 11 to 14 weeks___

   3 to 6 weeks ___ 15 to 18 weeks___

   7 to 10 weeks___ Longer ___

4. How are workers selected for the training program?

   Foreman recommendation ___

   Previous training record___

   Seniority ___

   Upon hiring ___

   Other (describe)_____

   _____

5. How is program conducted?

   a. Individual___ Or Group___

   b. Practical work___ And/or "theory"___

6. Wages of trainees

   a. Same as on previous job___

   b. Per cent of wages to be earned after training___

7. a. Cost per trainee_____

   b. Does calculation of cost include:

      Loss of output while training Yes___ No___

      Special training costs

      i. Instructional Yes___ No___

      ii. Loss of output of instructor Yes___ No___

8. a. Why do you have a training program?

      i. To provide for (more) skilled manpower needs___

      ii. To serve as an incentive for new hirees___

      iii. Other (explain) _____

      _____

   b. Would you find it more difficult to hire and retain good workers without a program? _____

9. What per cent of workers that went through your training program in the last year

   a. Are still with the company_____

   b. Are working on jobs for which they trained_____

   c. Are doing other work for the company (explain) _____

   _____

10. a. Do you make capacity to be promoted (with further training) a condition of employment?

      i. For no jobs___

      ii. For all jobs___

      iii. For which jobs _____

b. What per cent of your jobs, above the most unskilled, are held by workers who have been promoted?

i. From within___

ii. By workers hired at the job level___

iii. What percent of workers promoted require further training to fill their new posts___

11. Approximately how many of your trainees worked for your firm prior to training?_____

12. Approximately how many of your trainees were fresh entrants to your labor force?_____

13. How are your firm's needs for trained workers satisfied by outside training; that is,

a. Do vocational schools provide courses for your specific needs? _____

b. Do workers trained in vocational schools require further training in your firm for jobs related to their previous training? _____

c. If yes to b., why do they need further training?

i. Inadequate preparation___

ii. Lack of techniques and skills specific to your firm's needs although prior training provided adequate background?___

d. About what per cent of previously trained workers require further training in the general area of the occupation for which they trained, not just for special techniques required by your firm?_____

14. Do you offer training courses that might be considered background courses, offered by a vocational school, too?_____

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14. (cont.)

a. If yes, why do you offer them?

i. Prior training inadequate___

ii. New techniques introduced into field since training ("retooling" courses)___

iii. Other _____

15. Do you think you will expand your training program in the future?

Yes___ No___

b. Why?

i. Shift to more skilled work force___

ii. Tighter labor market for trained workers _____

_____

16. a. In what ways can outside vocational training aid you in fulfilling your future needs for trained workers?

_____

_____

_____

b. How would you suggest they improve their present training practices?_____

_____

17. Do you train workers for expected specific openings? _____ Or for the general expectation that there will always be a need in your firm for trained workers _____

18. In connection with the above question, do you forecast manpower needs for specific jobs?_____

19. For a given worker, what are the reasons you decide to enter him in a training program?_____

_____